

# FOREST RESEARCH NOTES

NORTHEASTERN FOREST EXPERIMENT STATION

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## Decay Under Basementless Houses

### Prevented by Soil Covers

Sills and joists of basementless houses on wet sites are subject to decay. Moisture vapor rising from the soil will condense on wood during cold weather (fig. 1). If the wood stays wet, fungi attack it and ultimately cause decay and possibly structural failure.

Inspect the crawl space under your home in early winter--especially along the north walls. If the wood is moist or shows decay, cover the soil under your home with an effective moisture barrier. You can use asphalt-coated papers with a smooth surface, such as roll roofing; laminated papers with water-proofing materials; or thin metal foils. No lapping of these covers is necessary. Also, they do not need to be fastened down or cemented, nor does the soil need to be leveled.

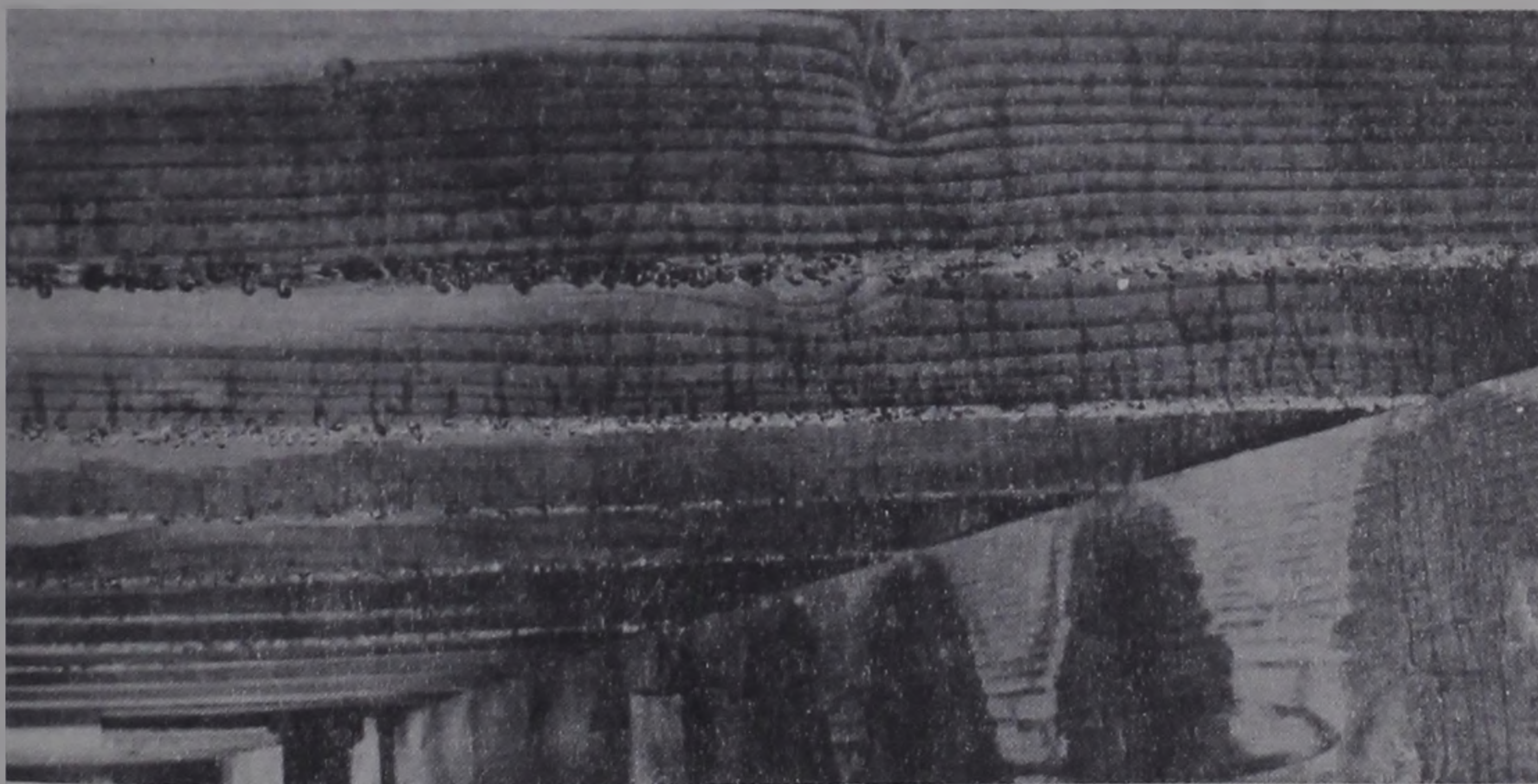


Figure 1.--Sills and joists "sweating" because moisture vapor condensed on them while they were cold.



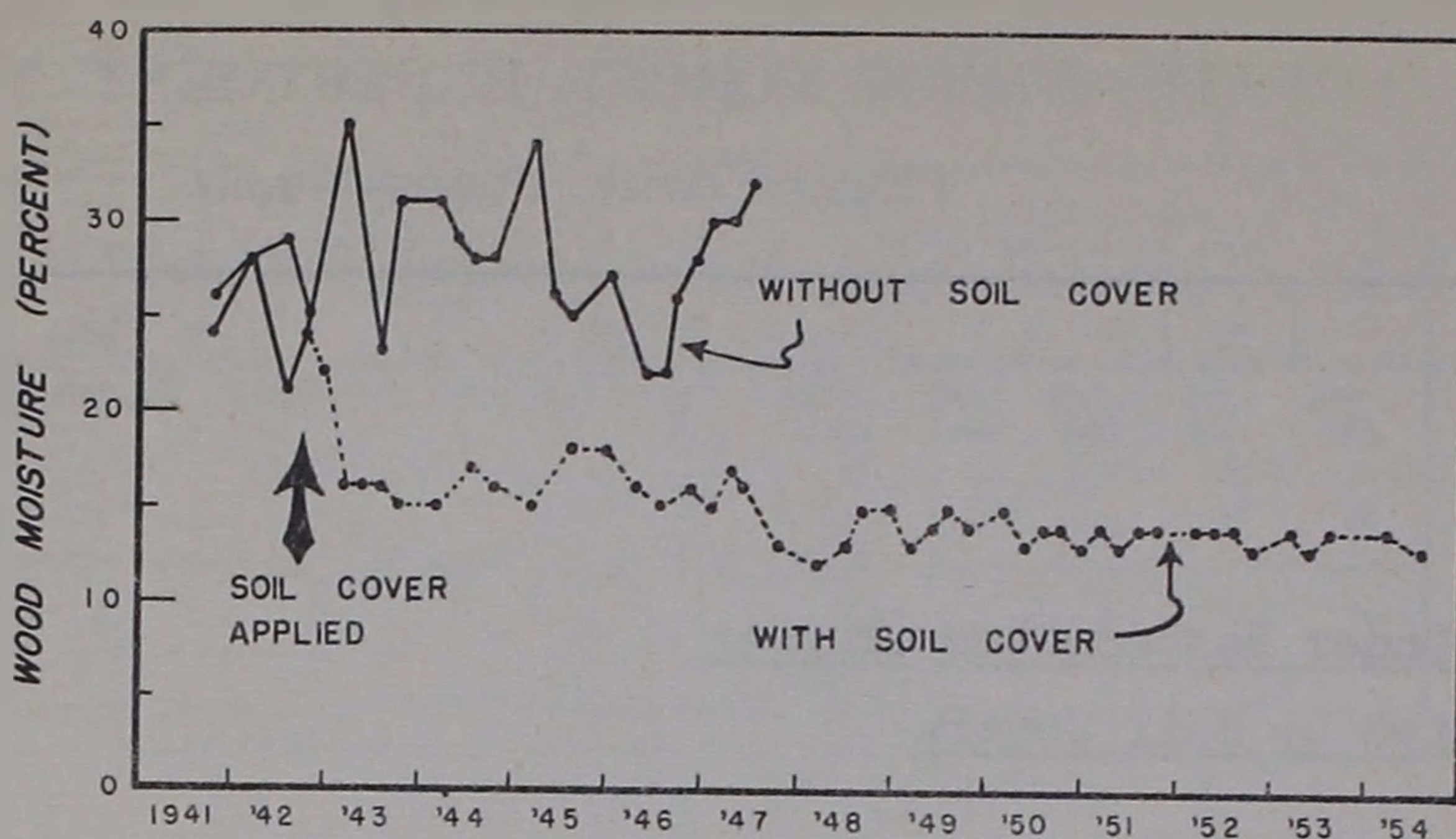


Figure 2.--In basementless houses studied from 1941-54, use of soil cover kept the moisture in the sills at a safe level. After 6 years the houses without soil cover were taken out of the test to keep them from decaying.

There should be a minimum space of 15 inches between the soil and subflooring to have sufficient room for soil-cover installation. If you use a soil cover, you can safely close all the ventilators in winter and thus keep the floors in your home warmer. Soil cover will check the movement of the moisture vapor from the soil. The sills, joists, and subflooring will become too dry for fungi to grow.

The effectiveness of soil covers is illustrated in figure 2. The sills under typical houses with no soil cover had a moisture content well above the 20 to 25 percent commonly regarded as the limit of safety from decay. The presence of soil covers resulted in sill moisture consistently below the level necessary for fungus growth.

Soil cover does not stop termites. It cannot strengthen wood already weakened by decay. Soil cover will not protect wood that is getting moisture from other sources. Before applying soil cover, check to be sure that improper outside grade or improper diversion from down spouts is not responsible for the moisture under your house. If water is reaching the wood from leaky plumbing or is seeping in through the wall, trace it down and stop it. Excess water used in washing floors can also lead to decay, especially if it runs under linoleum floor covering. You should leave no wood in contact with the ground.

--JESSE D. DILLER